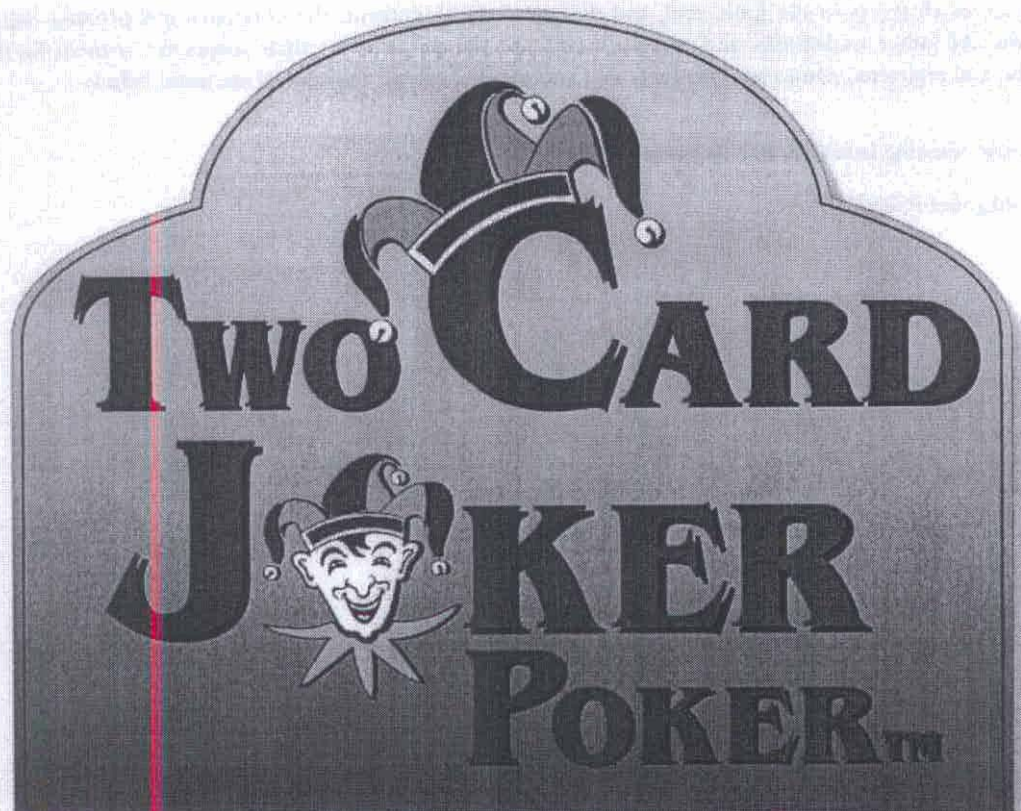


**PROGRESSIVE
GAMING**
INTERNATIONAL CORPORATION

TWO CARD JOKER

POKER™

with Super Flush Bonus



**User Manual with
Mathematical Analysis**

August 15, 2005

www.progressivegaming.net

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CONFIDENTIAL

About This Manual

This manual describes the basic procedures to deal and play the TWO CARD JOKER POKER WITH SUPER FLUSH BONUS table game and assumes Dealers are familiar with standard poker rules.

This manual is intended for casino operators and employees, regulatory agencies, and independent governing bodies. Operator policy and internal control procedures for processing and paying jackpots take precedence over the procedures in this manual.

PGIC recommendations, such as hand motions, are to ensure clarity in game play and betting requirements. However, management may alter the procedures to suit in-house policies.

Establishing Limits on Bets and Aggregate Payouts

Casino management may choose to adhere to the following:

- Define and post separate **minimum and maximum wagering limits** for both the base game and side bet.
- Define and post for Pair Up (side bet) wagers **only an aggregate limit for payouts** (maximum allowed total payout to winning Players wagering on the Pair Up side bet, during a single round of play). Posting an aggregate limit protects your establishment from excessive liability in any one round of play, while allowing the Player a wider range of betting options, subject to posted aggregate limits.

Document Revision History

Revision	Description
Rev A	Added two Pair Up side wager paytables (TCJP13 and TCJP14) Corrected header on page 10, part number in Glossary, and page numbering starting with page 10

Reference Documentation

Documentation for all PGIC products is available on the PGIC extranet at:

<https://extranet.progressivegaming.net>

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Game Procedure Steps

Step 1: Initial Wagers

Players may begin by placing wagers in the spot marked "Ante." See Figure 2.

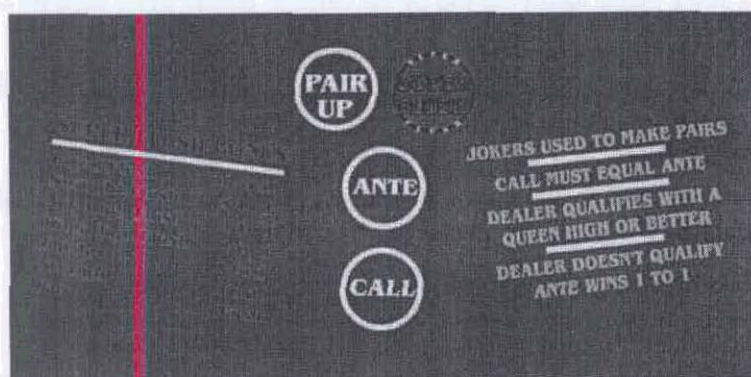
At the same time, Players have an option to place a Pair Up (side bet) wager and/or a Super Flush Bonus wager. These optional wagers play against the respective posted paytables and do not interact with Player and Dealer comparing hands for best poker rating.



Players may place a wager on the Ante wager only, the Pair Up only, the Super Flush Bonus wager only, or any combination of two or three of these bets.

Casino management is responsible for establishing and posting both base game and optional bet minimum/maximum limits. See "Establishing Limits on Bets and Aggregate Payouts" on page 1.

Figure 2 TWO CARD JOKER POKER WITH SUPER FLUSH BONUS bet spot on the table



Step 2: Dealing the Hands

The Dealer announces "All bets down; no more bets" prior to the delivery of the cards. The Dealer then verbally acknowledges those Players who have NOT made a Pair Up or Super Flush Bonus wager (Ex: "No Pair Up, positions 2, 3, and 5").

The Dealer shuffles, cuts, and proceeds to deal by hand, or delivers via an automatic shuffling machine (or by shoe, depending on regulatory requirements), a two-card hand face down to each player, then dealer, accordingly:

If dealing by hand:

- a. Shuffles and cuts, in accordance with in-house policies and procedures, then deals the cards one at a time.
- b. Delivers one card face down to each Player beginning to the Dealer's left.
- c. Delivers one card face down and places it on the layout in the Dealer's work area.

Step 4: Settling the Hands**A. Settling Folded Hand and/or Pair Up Wager**

The Dealer, once each Player has decided to fold or call, settles each folded hand and/or the Pair Up and Super Flush Bonus wagers individually. Acting in order from right to left, the Dealer reveals each folded hand and/or optional wager (Pair Up and/or Super Flush Bonus) hand to ensure there is or is not a winning possibility. Before moving to the next hand, the Dealer must collect the forfeited wager(s), pay any winning Pair Up or Super Flush Bonus wagers, and then lock the cards from that Player in the discard rack. The Pair Up and Super Flush Bonus wagers are paid according to the following paytables:

Table 1 Pair Up side wager payable

Hand Type	TCJP1	TCJP2	TCJP3	TCJP4	TCJP5	TCJP6	TCJP7
Pair of Jokers	40 to 1	50 to 1	50 to 1	40 to 1	60 to 1	50 to 1	40 to 1
Royal Flush	20 to 1	25 to 1	35 to 1	25 to 1	30 to 1	30 to 1	30 to 1
Straight Flush	5 to 1	6 to 1	5 to 1	6 to 1	5 to 1	5 to 1	5 to 1
Straight	3 to 1	2.5 to 1	2.5 to 1	2.5 to 1	2.5 to 1	2.5 to 1	2.5 to 1
Pair	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1
Flush	N/A	N/A	N/A	N/A	N/A	N/A	N/A
House Advantage	2.096%	2.096%	2.655%	2.795%	3.354%	4.053%	4.752%
Hit Frequency (1 in ~)	3.66	3.66	3.66	3.66	3.66	3.66	3.66

Hand Type	TCJP8	TCJP9	TCJP10	TCJP11	TCJP12	TCJP13	TCJP14
Pair of Jokers	50 to 1	40 to 1	40 to 1	40 to 1	40 to 1	40 to 1	35 to 1
Royal Flush	25 to 1	30 to 1	20 to 1	25 to 1	20 to 1	10 to 1	15 to 1
Straight Flush	4 to 1	4 to 1	5 to 1	4 to 1	4 to 1	5 to 1	4 to 1
Straight	3 to 1	3 to 1	2.5 to 1	3 to 1	3 to 1	3 to 1	3 to 1
Pair	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1
Flush	N/A	N/A	N/A	N/A	N/A	N/A	N/A
House Advantage	3.354%	2.655%	7.547%	4.053%	5.451%	4.89%	7.917%
Hit Frequency (1 in ~)	3.66	3.66	3.66	3.66	3.66	3.66	3.66

- The Dealer has a lower two-card poker ranking hand than the Player, the Player is paid equal money on the Ante and is paid on the Call wager according to the following payable:

Table 3 Call wager payable (paid on winning Call wager if dealer qualifies)

Hand Type	Odds
Pair of Jokers	8 to 1
Royal Flush	5 to 1
Straight Flush	3 to 1
Straight or less	1 to 1

- The Dealer and the Player tie; Dealer and Player push on all wagers.

C. Sample Hands and Their Settlement:


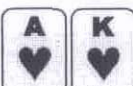






Table 4 Sample hand resolutions (the resolution columns are in units)

Player's Hand	Dealer's Hand	Player Action	Ante Resolution	Call Resolution
 	 	Call	Pays 1	Pays 1
 	 	Call	Pays 1	Push
 	 	Call	Loses	Loses
 	 	Call	Pays 1	Pays 3
 	 	Fold	Loses	N/A

Poker Rankings

For both Players and Dealer, each card is ranked according to its poker face value (i.e. two, three, four, etc., up to Ace), while all suits are equivalent. As TWO CARD JOKER POKER WITH SUPER FLUSH BONUS is a two-card game of poker, the hand rankings are slightly modified with respect to traditional poker. Jokers are used only to complete pairs, with a pair of Jokers the highest hand. The following table lists the TWO CARD JOKER POKER WITH SUPER FLUSH BONUS hand rankings from best (Pair of Jokers) to worst (High Card).

Table 5 TWO CARD JOKER POKER WITH SUPER FLUSH BONUS hand ranking examples

Hand Type	Example
Pair of Jokers	
Royal Flush	
Straight Flush	
Straight	
Pair	 or 
Flush	
High Card	



A Straight beats a Pair and a Pair beats a Flush. Hands like Four of a Kind, Full House, and Two Pair are not available in this game.

Calling. This is compared to the expected outcome from folding, and the greater value is chosen as the correct play.

Performing the aforementioned calculation yields the optimal strategy, shown below, for any possible condition the Player may face.

OPTIMAL STRATEGY

- Call with a hand of Q-5 or better;
- Fold otherwise.



A Player using the optimal strategy calls approximately 67% of hands.

Adopting this strategy, the Player's expectation is -0.0315 units per Ante wager. Hence, the theoretical house advantage against the optimal Player is 3.15% of the Ante. It is almost assured that the observed house advantage is slightly more than the theoretical figure because individuals are unlikely to play the game at an expert level.

A reliable estimate of the volatility of TWO CARD JOKER POKER WITH SUPER FLUSH BONUS is obtained through the standard deviation per wager. The variance can be obtained by taking the product of each probability of outcome and the associated quantity {actual outcome - expected outcome}² for that outcome. The standard deviation per hand is then calculated as the square root of the variance.

Based on the payoff schedule and the probabilities of achieving each type of hand, optimal strategy via the combinatorial code described earlier, we obtain a standard deviation of roughly 1.7 units for each unit of Ante wagered.

The casino win for representative numbers of hands may be constructed as follows. For a number of hands N , the estimated Player's loss (hence, casino win) is the product of N and the Player's expectation. The standard deviation of the Player's loss is the product of $N^{1/2}$ and the Player's one hand standard deviation.

Table A.3 Super Flush Bonus wager payable

Hand Type	Payouts	Frequency
Royal Flush	30 to 1	0.00279525
Straight Flush	5 to 1	0.03354298
Ace High Flush	3 to 1	0.02795248
King High Flush	2 to 1	0.02795248
Straight	Push	0.10901468
Pair	Push	0.12718379
Flush	1 to 1	0.12578616
Pair of Jokers	Push	0.000698812
House Advantage	2.795%	45.49%
Hit Frequency (1 in ~)	2.20*	

*Push hands on Pairs and Straights included.

Estimate of Hold

Though the Player's expectation, hence casino advantage, is calculated via mathematics, the same is not true of the casino hold. There is no available mathematical formula with which to derive casino hold. The casino hold is a function of many variables, several of which are not subject to objective analysis. These subjective variables include Player proficiency, the popularity of the game, perceived customer benefits from the game, and casino factors including placement of the game, number of available such games locally, table limits on the game, shifts during which the game is open, etc.

Given the above discussion of the uncertainty of a hold estimate, the hold of TWO CARD JOKER POKER WITH SUPER FLUSH BONUS is likely to be 20% to 30%.

TWO CARD JOKER POKER™

SUPER FLUSH BONUS



Two Card Joker Poker™ with Super Flush Bonus,
is played with a standard 52-card deck plus two (2) Jokers.
With four ways to play on this Two Card Joker variation, this
game allows a Player to make one or all of the following wagers'

◆ **Pair Up Wager** ◆ **Ante Wager** ◆ **Super Flush Bonus**



Pair Up Wager: A player has the option to place a PAIR UP wager to win a jackpot before each round of play. A player is not required to have an ANTE wager or SUPER FLUSH BONUS wager in order to place a PAIR UP wager.

Ante Wager: The object for the Player is to hold a two-card joker poker hand with a value higher than the Dealer's qualifying hand of "Queen" or better. A Player will place an equal wager on the CALL spot or fold. The Dealer's hand must qualify with a Queen or higher for the Player's Call bet to be paid. If the Dealer does "Not Qualify", the player's ANTE wager will be paid even money.

Super Flush Bonus Wager: A player has the option to place a SUPER FLUSH BONUS wager to win a jackpot before each round of play. A player is not required to have an ANTE wager or PAIR UP wager in order to place a SUPER FLUSH BONUS wager. Make the best poker hand to win!

Play All Wagers: An additional option of playing PAIR UP, ANTE and the SUPER FLUSH BONUS wager only, or any combination of these three bets for a chance to win.

Jokers are used only to complete pairs, with a Pair of Jokers as the highest winning hand.

The ranking of hands are different from that of traditional poker.

For example: In Two Card Joker Poker, a STRAIGHT beats a FLUSH!

PLAYER HAND	CALL	PAIR UP
	PAYS X TO 1	PAYS X TO 1
Pair of Jokers	8 to 1	40 to 1
Royal Flush	5 to 1	20 to 1
Straight Flush	3 to 1	5 to 1
Straight	1 to 1	3 to 1
Pair	1 to 1	1 to 1
Flush	1 to 1	N/A
High Card	1 to 1	N/A
House Advantage	3.15%	2.10%
Hit Frequency	-----	27%

PLAYER HAND	SUPER FLUSH BONUS
	PAYS X TO 1
Royal Flush	30 to 1
Straight Flush	5 to 1
Ace King High	3 to 1
King High Flush	2 to 1
Straight	Push
Pair	Push
Flush	1 to 1
Pair of Jokers	Push
House Advantage	2.795%
Hit Frequency	2.20*

* Push hands on Pairs and Straights are included.

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